

Deriv 56402

Work Order ID 53473

November 6, 2009 8:39:35 AM



Page 1

Item ID:	D3391-021	Accept		Setup	Start	
Revision ID:	H				Stop	
Item Name:	Fwd Tube Assembly					
Start Date:	05/11/2009	Start Qty:	1.00			
Required Date:	13/11/2009	Req'd Qty:	1.00			
Reference:						

Cust Item ID:
Customer:



Approvals:	Process Plan:	<u>BP</u>	Date:	<u>09-11-5</u>	Tooling:		Date:		Run	Start	
	QC:		Date:		SPC (Y/N):		Date:			Stop	

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D3391	Rev H								

100
 Skidtubes 0.00
Skidtubes Memo 0.00
Skidtubes Cut extrusion to 46.52 +0.010 -0.020

DP

9-11-23

110
 BENDING MACHINE - SKIDTUBES 0.00
CNC Bend 1 Memo 0.00
CNC Delta 100 Bender Bend as per Dwg D3391 Using Bend Prog 3391021

1 h9/11/24

120
 QC5- Inspect part completeness to step on W/O 0.00
QC Memo h2 6.75" 0.00
Quality Control L° 12.9°

2 S 02/11/24



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Item ID: D3391-021

Accept



Setup Start



Revision ID: H

Stop



Item Name: Fwd Tube Assembly

Start Date: 05/11/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 13/11/2009 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130 HAAS 1 HAAS CNC vertical machine #1	HAAS CNC VERTICAL MACHINING #1 Memo 1-Machine as per Folio FA590 Rev. <u>AA</u> & Dwg D3391 Rev. <u>H</u> Identify as D3391-1 2-Debur	0.00 0.00				<u>1</u>			<u>lto</u>
140 QC Quality Control	QC2- Inspect parts off machine FAI/FAIB Memo	0.00 0.00				<u>1</u>			
150 Mill Conv Conventional Milling Machine	CONVENTIONAL MILLING MACHINE Memo Drill X1 Aft cap as per Dwg D3391 .1875" dia	0.00 0.00				<u>1</u>	<u>0</u>		

SP 09/12/08

SP 09/12/08

mm

09/12/11

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D3391-021 PAR #: _____ Fault Category: Machined parts NCR: Yes No DQA: _____ Date: 10-03-02
 Resolution: Accepted Disposition: Use as is QA: N/C Closed: _____ Date: 10/03/02

NCR: <u>53473</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
09/12/08	130	Dimension of $3.300 \pm .040$ was too thin at one end. 2.288. Part Part was put cracked	<u>CP</u> 09.12.14 per 09/10/12	No replace. ↑ Tube OK. TEST FIT OK. No significant effect on strength of tube	<u>SS</u> 09/12/08	<u>1000-12</u>	<u>CP</u> 09.12.14 09/10/12	<u>S</u> 10/02/18
		IN jig Because where the part is Bend the diameter came out oversize. operator error on the set up & tool offset. R.C. LOA.	<u>CP</u> 09.12.14	GET ENG SIGN-OFF BASED ON TEST FIT → OK 10.02.12	<u>N/A</u>	<u>1000-12</u>	<u>CP</u> 09.12.14	<u>S</u> 10/02/18
		Dimension of $4.250 \pm .010$ was <u>4.300-4.315</u> 09.12.14 Part Bad origin operator error and folio not clear	<u>CP</u> 09.12.14	- no replace, folio fixed. - Folio was already clear	<u>SS</u> 09/12/08	<u>1000-12</u>	<u>CP</u> 09.12.14	<u>S</u> 10/02/18

NOTE: Date & initial all entries R.C. LOA. ←

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Item ID: D3391-021

Accept



Setup Start



Revision ID: H

Stop



Item Name: Fwd Tube Assembly

Start Date: 05/11/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 13/11/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

160

QC2- Inspect parts off machine FAI/FAIB

0.00



QC

Memo

0.00

Quality Control

mf
09/18/11

170

QC8- Inspect parts - second check

0.00



QC

Memo

0.00

Quality Control

CP
10.02.22
mt
10-2-20

POSITIVE RECALL

EFFECTIVE 09.12.14 AUTH CPRELEASED UP DATE 10.02.16*★* TEST FIT REQ'D

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Item ID: D3391-021

Accept



Setup Start



Revision ID: H

Stop



Item Name: Fwd Tube Assembly

Start Date: 05/11/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 13/11/2009 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

180

0.00



Skidtubes

Skidtubes

Memo

0.00

1-Drill float bag holes as per Dwg D3391 using DT8798(Do not open tow cap holes to finish size)
(ONLY DRILL HOLES MARKED "A")

2-Drill Remaining two holes for tow cap using DT 8819 Locating off of .1875" holes drilled in previous step

3-Open tow cap holes to .208" as per Dwg D3391

4-Open Tow Ring hole to .640" as per Dwg D3391

5- open float bag holes 0.328" and counter sink as per dwg.D3391

6-Deburr & Scribe Batch number Inside aft end.

7-Transfer drill D3391-021 with D3391-023

M 10/2/16

190

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

8/10/12/16

Quality Control

40

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Item ID: D3391-021

Accept

Revision ID: H

Item Name: Fwd Tube Assembly

Start Date: 05/11/2009 Start Qty: 1.00

Required Date: 13/11/2009 Req'd Qty: 1.00

Reference:

Cust Item ID:

Customer:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

200

Chemical Conversion Coat per QSI005 4.1

0.00



HandFinish

Memo

0.00

Hand Finishing

1 11/10/21/17

210

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

DP 10-2-17

220

Skidtubes

0.00



Skidtubes

Memo

0.00

Skidtubes

1-instal spacers as per dwg D3391

A/R Magnabond 6398 batch: 11/24/17

exp. date: 11/11/30

cure time 12hrs. as per QSI015

2- grind crossbolt flush

3-back drill crossbolt if necessary

11/24/17 11/10/21/17 11/10/21/18

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Item ID: D3391-021

Accept



Setup Start



Revision ID: H

Stop



Item Name: Fwd Tube Assembly

Start Date: 05/11/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 13/11/2009 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
230 QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00 0.00	S 10/02/18			(X)			
240 Powdercoat Powder Coating	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum Memo START TIME: 8:15 OVEN TEMPERATURE: 320° FINISH TIME: 8:45	0.00 0.00	Bk 10-02-19			(P)			
250 QC Quality Control	QC3- Inspect Part Finish Memo	0.00 0.00	7 m-h 10/02/22			(1X)			

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Item ID: D3391-021

Accept



Setup Start



Revision ID: H

Stop



Item Name: Fwd Tube Assembly

Start Date: 05/11/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 13/11/2009 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start



QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

255



Skidtubes

Skidtubes

Skidtubes

Memo

**** install D3591-1 spacer as per DSI9364 and wearplate and gasket as per
DWG ****

0.00

0.00

=> m-h 10/02/22

(IX)

257



QC

Quality Control

QC5- Inspect part completeness to step on W/O

Memo

0.00

0.00

8.10.22

(X)

260



Packaging

Packaging

Identify as per dwg & Stock Location: _____

Memo

0.00

0.00

w/o 54395 => m-h 10/02/22






(IX)



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Item ID: D3391-021 Accept  Setup Start 
Revision ID: H Stop 
Item Name: Fwd Tube Assembly
Start Date: 05/11/2009 Start Qty: 1.00  Cust Item ID:
Required Date: 13/11/2009 Req'd Qty: 1.00  Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start 
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop 

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
280 	QC21- Final Inspection - Work Order Release	0.00							
QC Quality Control	Memo	0.00							

10/02/23 
MF
10-2-22

Picklist Print

November 6, 2009 8:39:40 AM

Page 1

Work Order ID: 53473

Parent Item: D3391-021RevH

Parent Item Name: Fwd Tube Assembly


Comments:

Start Date: 05/11/2009

Required Date: 13/11/2009

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D6013-047RevA		Manufactured	No			100	Each	57.0000	1.0000			
												
Skidtube Material												

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

LG

57

23935

5

26547

52

255

Each

131.0000

4.0000

DD 9-11-23
(1)

D3670-4-200RevA

Manufactured

No



SPACER

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

ST

131

46106

4

48198

42

48269

85

255

Each

22.0000

1.0000

(4) 10/2/17

D3401-041RevB

Manufactured

No



Tow Cap Assembly

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

ST

22

36216

1

41931

5

46029

16

10/02/22
m'h
TX

Picklist Print

Page 2

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Work Order ID: 53473



Parent Item: D3391-021RevH



Parent Item Name: Fwd Tube Assembly

Start Date: 05/11/2009

Required Date: 13/11/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D3564-13RevD		Manufactured	No			255	Each	54.0000	1.0000			
Wearshoe												

Warehouse Loc Qty Loc Code

Location

Main Warehouse

FP17

42

51611

32

52059

10

Main Warehouse

ST

12

45409

2

46495

10

D3566-13RevC

Manufactured No

255

Each

31.0000

1.0000



Gasket

Warehouse Loc Qty Loc Code

Location

Main Warehouse

FP

29

51606

29

Main Warehouse

ST

2

45717

1

50265

1

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Shop Packet Print

Page 2

Picklist Print

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Work Order ID: 53473



Parent Item: D3391-021RevH



Parent Item Name: Fwd Tube Assembly


Start Date: 05/11/2009

Required Date: 13/11/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
AN960C10L  washer		Purchased	No			255	Each	3,956.000	10.0000			

NAS1149C0332R

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
OFFSHORE		
FG	100	
103585	100	
Main Warehouse		
ST	3856	
112116	628	
112612	2228	
112933	1000	

M113288

10x m-h 10/02/22

AN3C4A  BOLT	Purchased	No				255	Each	994.0000	10.0000			
---	-----------	----	--	--	--	-----	------	----------	---------	--	--	--

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
ST	994	
112314	13	
112720	12	
112724	3	
112794	366	
112829	500	
112991	100	

M113644

10x m-h 10/02/22

Picklist Print

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Work Order ID: 53473



Parent Item: D3391-021RevH



Parent Item Name: Fwd Tube Assembly

Start Date: 05/11/2009

Required Date: 13/11/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D3672-1RevB Phenolic Washer		Manufactured	No			255	Each	1,860.000	4.0000			<i>[Handwritten mark]</i>

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST

1360

39275

19

42329

5

47628 ✓

336

52505

1000

Main Warehouse

ST117

500

51674

500

AELS-1032-130

Purchased

No

255

Each

0.0000

2.0000



INSERT

AELS-1032-225

Purchased

No

255

Each

0.0000

10.0000



INSERT

4X m-l 10/02/22

M110511 m-l 10/02/22

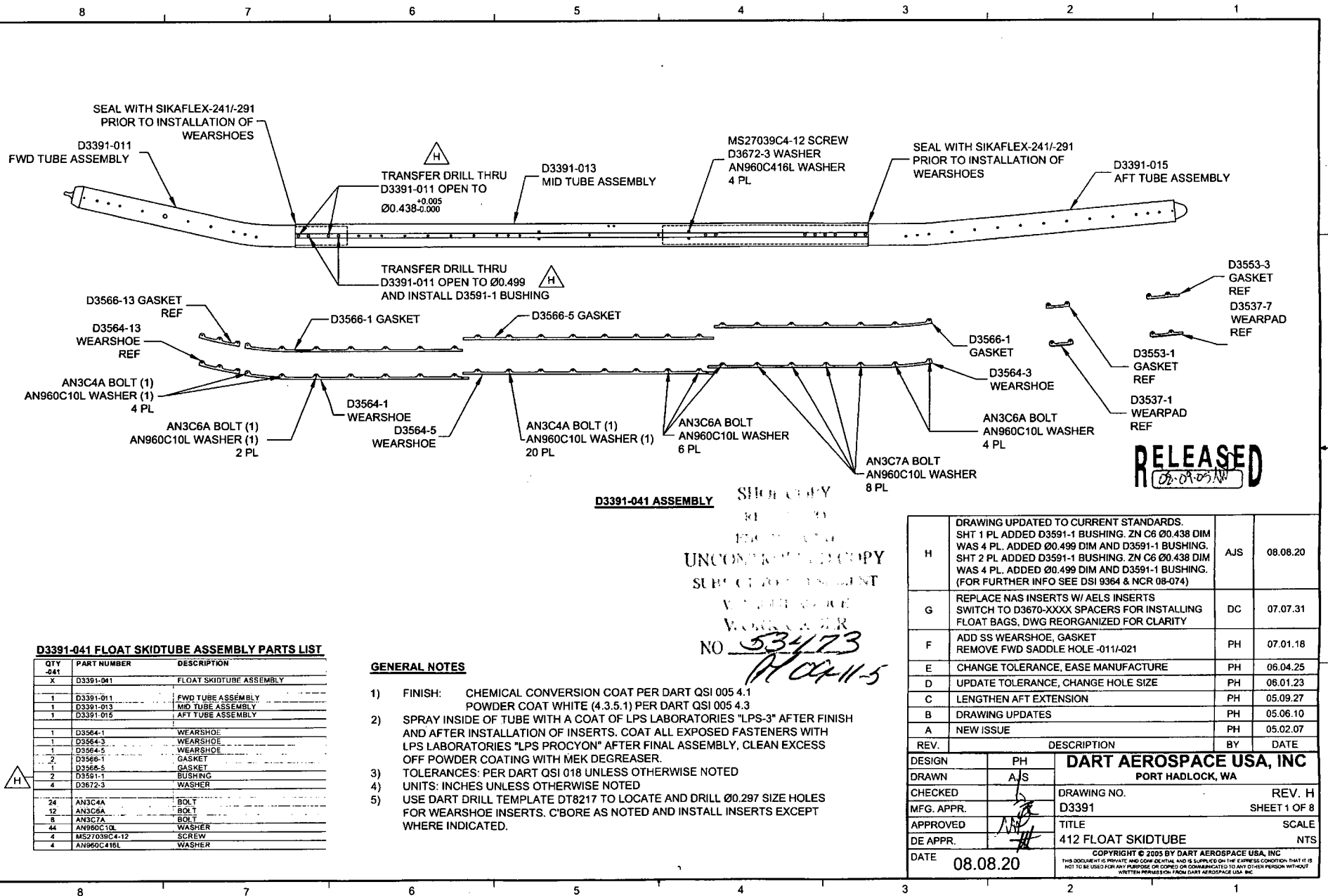
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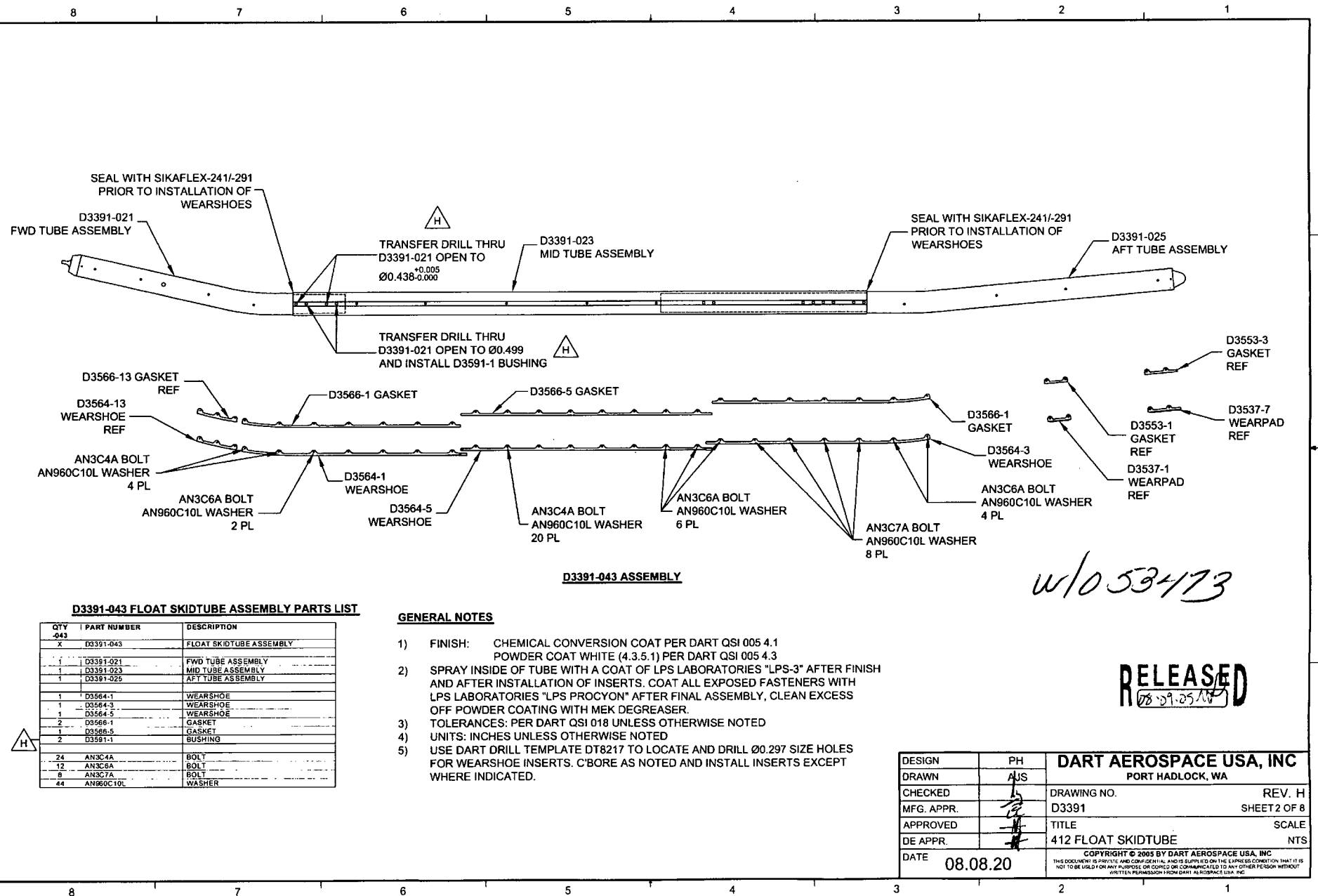
10X

November 6, 2009 8:39:40 AM

Shop Packet Print

Page 4





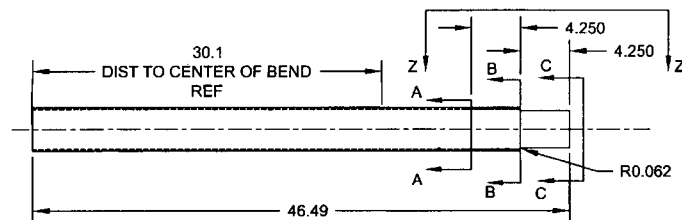
D3391-043 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

QTY	PART NUMBER	DESCRIPTION
X	D3391-043	FLOAT SKIDTUBE ASSEMBLY
1	D3391-021	FWD TUBE ASSEMBLY
1	D3391-023	MID TUBE ASSEMBLY
1	D3391-025	AFT TUBE ASSEMBLY
1	D3564-1	WEARSHOE
1	D3564-3	WEARSHOE
1	D3564-5	WEARSHOE
2	D3566-1	GASKET
1	D3566-5	GASKET
2	D3591-1	BUSHING
24	AN3C4A	BOLT
12	AN3C6A	BOLT
8	AN3C7A	BOLT
44	AN960C10L	WASHER

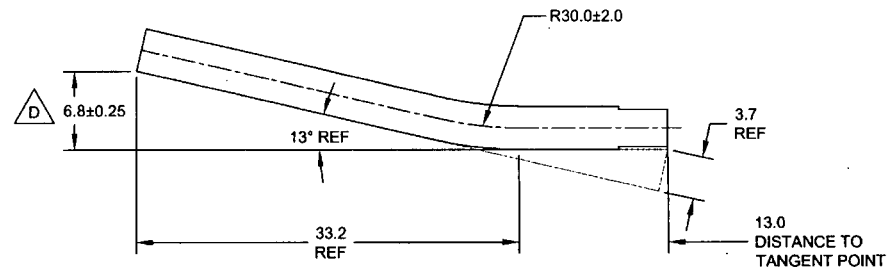
GENERAL NOTES

- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 2) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
UNITS: INCHES UNLESS OTHERWISE NOTED
- 3) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT WHERE INDICATED.

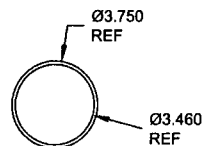
DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. H
MFG. APPR.		D3391	SHEET 2 OF 8
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NTS
DATE	08.08.20	<small>COPYRIGHT © 2005 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC</small>	



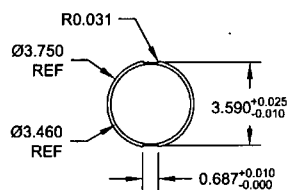
D3391-1 CUTTING DETAIL
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



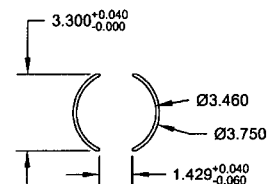
D3391-011/-021 BENDING DETAIL
(MAKE FROM D3391-1)



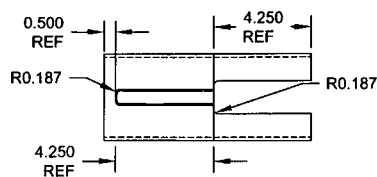
SECTION A-A
SCALE 2X



SECTION B-B
SCALE 2X



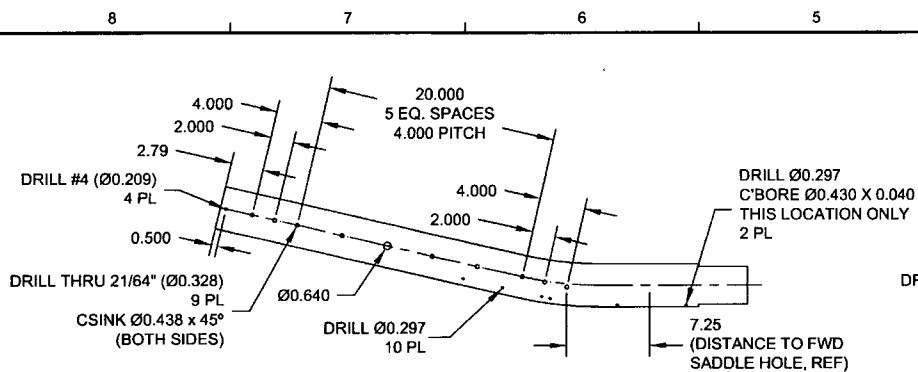
SECTION C-C
SCALE 2X



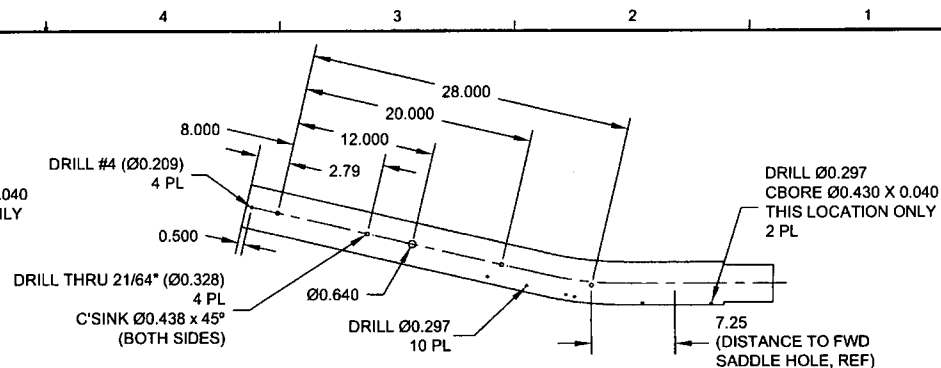
VIEW Z-Z
SCALE 2X

RELEASED
08-05-11

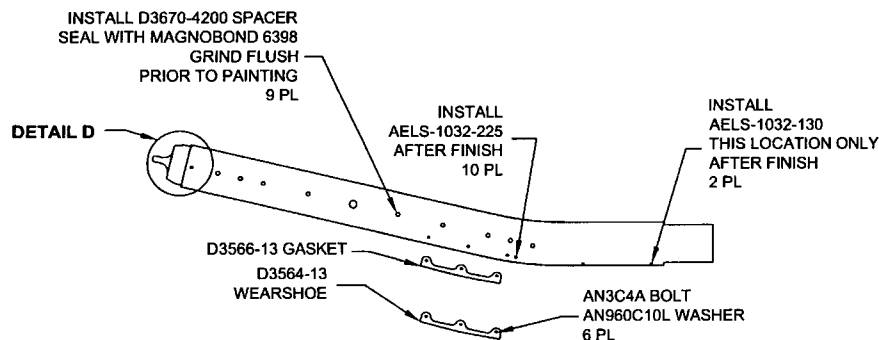
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DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. H
MFG. APPR.		D3391	SHEET 3 OF 8
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NTS
DATE	08.08.20	<small>COPYRIGHT © 2005 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PROPRIETARY AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	



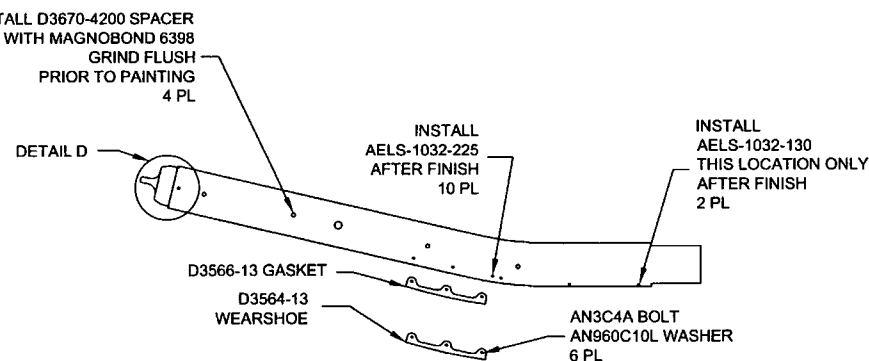
D3391-011 DRILLING DETAIL



D3391-021 DRILLING DETAIL



D3391-011 ASSEMBLY DETAIL

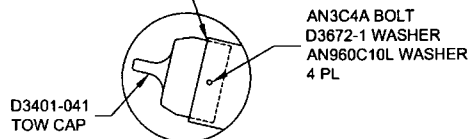


D3391-021 ASSEMBLY DETAIL

D3391-011/-021 FWD TUBE ASSEMBLY PARTS LIST

QTY - 011	QTY - 021	PART NUMBER	DESCRIPTION
X		D3391-011	FWD TUBE ASSEMBLY
	X	D3391-021	FWD TUBE ASSEMBLY
1	1	D6013-047	FWD TUBE
1	1	D3401-041	TOW CAP
1	1	D3564-13	WEARSHOE
1	1	D3566-13	GASKET
9	4	D3670-4200	SPACER
4	4	D3672-1	WASHER
10	10	AN3C4A	BOLT
10	10	AN960C10L	WASHER
2	2	AELS-1032-130	INSERT
10	10	AELS-1032-225	INSERT

SEAL WITH
SIKAFLEX-241/-291

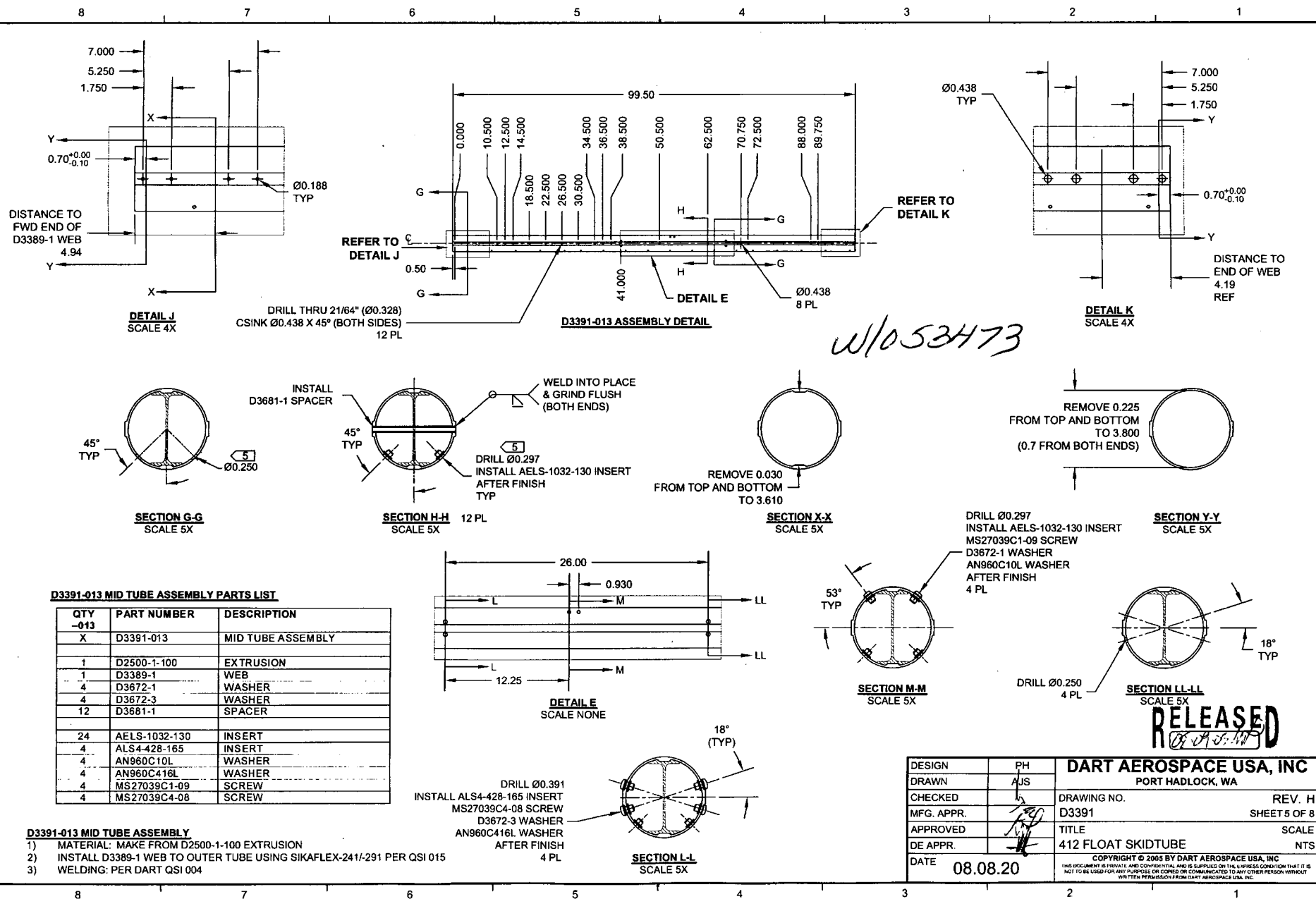


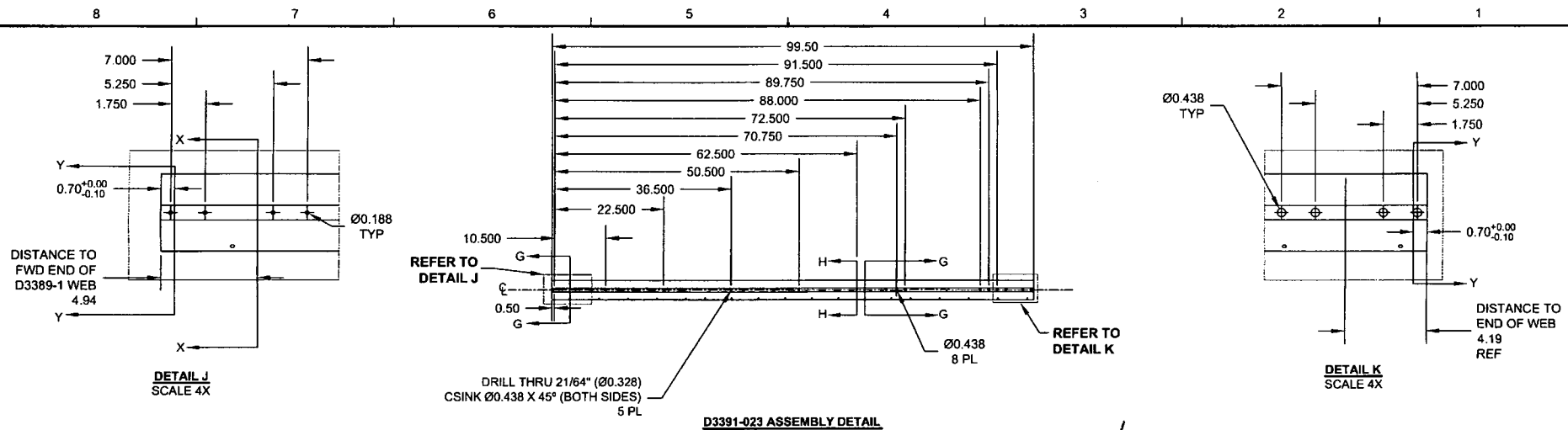
DETAIL D
SCALE 2X

W/O 53473

RELEASED
08-09-25-11

DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. H
MFG. APPR.		D3391	SHEET 4 OF 8
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NTS
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w/053473

D3391-023 MID TUBE ASSEMBLY PARTS LIST

QTY - 023	PART NUMBER	DESCRIPTION
X	D3391-023	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
5	D3681-1	SPACER
20	AELS-1032-130	INSERT

D3391-023 MID TUBE ASSEMBLY

- 1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
- 2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/291 PER QSI 015
- 3) WELDING: PER DART QSI 004

RELEASED

DESIGN	PH	DART AEROSPACE USA, INC
DRAWN	AS	PORT HADLOCK, WA
CHECKED		DRAWING NO. REV. H
MFG. APPR.		D3391 SHEET 6 OF 8
APPROVED		TITLE SCALE
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